

Appl. No. 10/706,347  
Amdt. dated February 01, 2006  
Reply to Office Action of 11/7/2005

Docket No. A01464

### REMARKS/ARGUMENTS

Claims 1, 2, 6, 7, and 9-22 remain in this application. Claims 3-5 are canceled, without prejudice. Claim 8 is withdrawn in response to the restriction requirement included in the above-identified Office Action. Claims 9-22 are new.

#### Record of Interview

On January 18, 2006, the undersigned Agent met with the Examiner to discuss the present application. The prior art of record and how the instant invention differs from prior art were discussed. Possible amendment options were also discussed.

#### Response to Restriction Requirement

In response to the restriction requirement stated in the above-identified Office Action, Applicant elects Group I (claims 1-7), with traverse. Applicant submits that the claims drawn to an adhesive composition (claims 1-7) are not properly separate art from claims drawn to a method of bonding substrates together (claim 8) by using such an adhesive composition.

#### Amendments: Lack of New Matter

Applicant submits that the forgoing claim amendments do not introduce new matter into the present application.

In currently amended claim 1 and new claim 10, the provision that each polymerized unit of the acrylic polymer composition have molecular weight less than 800 is based on the present specification as follows: p. 5, lines 22-23 disclose that some embodiments are made without macromonomer, and p. 5, line 15 defines macromonomer as having molecular weight of 800 to 200,000. A similar provision is removed from part (ii) of currently amended claim 1 in order to remove redundancy.

In currently amended claim 1 and new claims 10, 15, and 19, the provision that the fluid medium be at least 50% water is based on the current specification from p. 2, line 30 to p. 3, line 1.

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In currently amended claim 1 and in new claims 7, 15, and 17, the provision that the carboxyl-reactive monomer be glycidyl (meth)acrylate is disclosed in the present specification on p. 7, lines 17-18. (The definition of "(meth)" in parenthesis is defined on p. 3, lines 12-14).

Currently amended claim 1 and new claims 7, 15, and 17 recite that each carboxyl-reactive monomer in the polymer composition is selected from glycidyl acrylate, glycidyl methacrylate, and mixtures thereof. That is, in currently amended claim 1 and in new claims 7, 15, and 17, the claimed polymer compositions have every one of their carboxyl-reactive monomer units selected from glycidyl acrylate, glycidyl methacrylate, and mixtures thereof; thus, the claimed polymer compositions have no carboxyl-reactive monomer units other than glycidyl acrylate, glycidyl methacrylate, or a mixture thereof. In the present specification, "glycidyl (meth)acrylate" is disclosed as a preferred group of carboxyl-reactive monomers (p. 7, lines 17-18). Limiting the carboxyl-reactive monomer to glycidyl (meth)acrylate and only glycidyl (meth)acrylate is merely limiting the scope of the claimed invention to an explicitly disclosed preferred embodiment.

In new claims 10, 13, 19, and 21, the provision that the carboxyl-reactive monomer be acetoacetoxyethyl (meth)acrylate is disclosed as a preferred embodiment in the present specification on p. 7, lines 17-18.

New claims 9, 14, 18, and 22 recite polymer composition dispersed in fluid medium, which is disclosed in the present specification on p. 4, line 29.

New claim 11 recites the feature recited in originally-filed claim 2.

New claim 12 recites a feature recited in originally-filed claim 6.

New claims 13, 17, and 21 recite bifunctional polymer, which is disclosed in the present specification on p. 10, lines 1-5.

The macromonomer recited in new claims 15, 17, 19, and 21, is based on the present specification as follows. P. 5, lines 20-21 state that the monomers suitable for acrylic polymers are also suitable for macromonomers. One broad class of such monomers is "(meth)acrylic acid and alkyl (meth)acrylate esters" (p. 3, lines 26-27).

Embodiments in which macromonomer includes (meth)acrylic acid are disclosed on p. 6,

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line 11. Also, Example 1 involves the use of a methacrylic acid macromonomer (p. 14, line 22). Additionally, p. 6, lines 11-12 identify "macromonomers containing acrylic acid and/or methacrylic acid as polymerized units" as a preferred monomer with carboxyl functionality.

Response to rejection of claims 1-4 and 7 over Koch

In the above-identified Office Action the Examiner rejected claims 1-4 and 7 under 35 USC §102(b) as being anticipated by US 5,578,683 (Koch).

Koch discloses pressure-sensitive adhesives containing polymers with "an acrylic backbone polymer having pendant therefrom sidechains which individually have a molecular weight of from about 1,000 to about 25,000" (col. 3, line 67 to col. 4, line 3). Koch discloses that such polymers are made using "one or more reactive crosslinkable macromonomers preferably having epoxy, hydroxy, or carboxyl functional groups" (col. 4, lines 7-9). Koch defines such macromonomers as having molecular weight of about 1,000 to about 25,000 (col. 4, line 19). In describing the various embodiments of his macromonomer (col. 4, lines 5-60), Koch discloses the use of glycidyl methacrylate ("GMA") as a polymerized unit of the macromonomer. Koch does not teach or suggest the use of GMA except as a unit that is part of the macromonomer.

In contrast to Koch's teaching, currently amended independent claim 1 and new independent claim 10 each recites a polymer in which all the polymerized units have molecular weight of less than 800. Thus, the polymers recited in currently amended claim 1 and new claim 10 have no polymerized unit that is a macromonomer. Therefore, Applicant submits that currently amended claim 1 and new claim 10 are different materials from those disclosed by Koch.

Also in contrast to Koch, independent new claim 15 recites polymer in which glycidyl (meth)acrylate is incorporated directly into the polymer backbone and is not part of a macromonomer. Therefore, Applicant submits that the polymers recited in new claim 15 are different from those disclosed by Koch.

Additionally in contrast to Koch, independent new claim 19 recites polymer in which acetoacetoxyethyl (meth)acrylate is incorporated directly into the polymer

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backbone and is not part of a macromonomer. Koch does not teach or suggest the use of acetoacetoxyethyl (meth)acrylate, and Koch does not teach or suggest the use of a carboxyl-reactive monomer outside of a macromonomer. Therefore, the polymer recited in new claim 19 is different from the polymers disclosed by Koch.

For the reasons stated herein above, Applicant submits that the current independent claims (currently amended claim 1 and new claims 10, 15, and 19) are novel over Koch. The remaining claims (2, 6, 7, 9, 11-4, 16-18, and 20-22) are each dependent, either directly or indirectly, on one or more of current independent claims 1, 10, 15, and 19, and so Applicant submits that the remaining claims are likewise novel over Koch.

Response to rejection of claims 1-4 and 7 over Mallya

In the above-identified Office Action the Examiner rejected claims 1-4 and 7 under 35 USC §102(b) as being anticipated by US 4,812,541 (Mallya).

Mallya discloses polymers made by a variety of techniques in a variety of solvents, including ethyl acetate, hexane, and acetone (see, for example, col. 3, line 67 to col. 4, line 4). Mallya describes the polymers of his invention as "solvent soluble" (col. 4, lines 13-14). Mallya does not teach the use of the polymers of his invention in a composition that contains water. That is, Mallya does not teach compositions that contain both water and the polymers of his invention.

In contrast to Mallya, all of the current independent claims (currently amended claim 1 and new claims 10, 15, and 19) recite the use of a fluid medium that is at least 50% water. Therefore, Applicant submits that the current independent claims recite adhesive compositions that are different from those disclosed by Mallya. Consequently, Applicant submits that the current independent claims (and also the remaining claims, which depend on one or more of the current independent claims) are novel over Mallya.

Response to rejection of claims 1-4 and 7 over Plamhottam

In the above-identified Office Action the Examiner rejected claims 1-4 and 7 under 35 USC §102(b) as being anticipated by US 5,639,811 (Plamhottam).

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Plamhottam discloses polymers made by a variety of techniques in a variety of solvents, including ethyl acetate, hexane, and acetone (see, for example, col. 4, lines 7-12). Plamhottam does not teach the use of the polymers of his invention in a composition that contains water. That is, Plamhottam does not teach compositions that contain both water and the polymers of his invention.

In contrast to Plamhottam, all of the current independent claims (currently amended claim 1 and new claims 10, 15, and 19) recite the use of a fluid medium that is at least 50% water. Therefore, Applicant submits that the current independent claims recite adhesive compositions that are different from those disclosed by Plamhottam. Consequently, Applicant submits that the current independent claims (and also the remaining claims, which depend on one or more of the current independent claims) are novel over Plamhottam.

Response to rejection of claims 1-4, 6, and 7 over EP'469

In the above-identified Office Action the Examiner rejected claims 1-4 and 7 under 35 USC §102(b) as being anticipated by EP 0 653 469 (EP'469).

EP'469 recites polymers that contain polymerized units of both acetoacetoxyethyl (meth)acrylate and glycidyl (meth)acrylate (abstract).

In contrast, currently amended claim 1 and new claim 15 recite polymer compositions in which each carboxyl-reactive monomer is glycidyl (meth)acrylate (i.e., glycidyl acrylate, glycidyl methacrylate, or a mixture thereof). Because "each" carboxyl-reactive monomer in the polymer composition is recited to be glycidyl (meth)acrylate, the claimed polymer composition does not contain both glycidyl (meth)acrylate and acetoacetoxyethyl (meth)acrylate. Therefore, Applicant submits that the polymer compositions recited in currently amended claim 1 and in new claim 15 are not disclosed by EP'469, and thus Applicant submits that currently amended claim 1 and new claim 15 are novel over EP'469.

Similarly, in new claims 10 and 19, the recited polymer compositions contains acetoacetoxyethyl (meth) acrylate and do not contain both acetoacetoxyethyl (meth)acrylate and glycidyl (meth)acrylate. Therefore, Applicant submits that the

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polymer compositions recited in currently amended claim 1 and in new claim 15 are not disclosed by EP'469, and thus Applicant submits that currently amended claim 1 and new claim 15 are novel over EP'469.

Additionally, Applicant submits that current claims 2, 6, 7, 9, 11-14, 16-18, and 20-22, because each is directly or indirectly dependent on one of currently amended claim 1 or new claims 10, 15, and 19, are also novel over EP'469.

Response to rejection of claims 1-7 over Kanetou

In the above-identified Office Action the Examiner rejected claims 1-7 under 35 USC §102(b) as being anticipated by US 5,728,767 (Kanetou).

Kanetou discloses an "aqueous resin composition" (col. 5, line 47). To make this resin composition, Kanetou discloses that the ingredients are "mixed or dissolved and polymerized in water" (col. 5, lines 58-59). Kanetou discloses two ingredients: a "modified polyolefin" (col. 5, lines 47-48) and "one kind or mixture of two or more kinds of acrylic or methacrylic monomers" (col. 5, lines 57058). Kanetou also discloses that an acrylic or methacrylic oligomer may be used (col. 5, lines 5-6). That is, Kanetou's disclosed resin composition is made by polymerizing one or more acrylic or methacrylic monomers with a modified polyolefin (and possibly with other ingredients).

The modified polyolefin disclosed by Kanetou is a macromonomer. As discussed herein above, Kanetou teaches that his modified polyolefin is used by mixing it with one or more acrylic or methacrylic monomers and then polymerizing the mixture. Therefore, because Kanetou's modified polyolefin is capable of copolymerizing with acrylic or methacrylic monomers, Kanetou's modified polyolefin is a monomer. Also, Kanetou's modified polyolefin has weight average molecular weight of 1,000 to 100,000 (col. 5, lines 49-50). Because it is a monomer with molecular weight of 1,000 or more, Kanetou's modified polyolefin meets the definition of "macromonomer."

Additionally, Kanetou's modified polyolefin contains within itself units of olefin monomers. Kanetou teaches that his modified polyolefin is made by

*"copolymerizing polypropylene, polyethylene, copolymer of propylene or ethylene with alpha-olefin or degradation*

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*products of these under heat or with oxidizing agent,  
radical-generating agent or the like, with 0.1% to 20% by  
weight one kind or not less than two kinds of acid  
anhydride, carboxylic acid or alcohol with radically  
polymerizable double bond" (col. 5, lines 50-56).*

Thus, at least 80% by weight of the modified polyolefin is units of olefin monomers.

In sum, Kanetou discloses the use of macromonomer that contains carboxyl groups and also has 80% by weight units derived from olefin monomers.

In contrast, currently amended claim 1 and new claim 10 recite polymer compositions in which all of the polymerized units are derived from monomers with molecular weight less than 800. Thus, the polymer compositions of currently amended claim 1 and new claim 10 do not have units derived from macromonomers and are thus distinct compositions from those disclosed by Kanetou. Therefore, Applicant submits that currently amended claim 1 and new claim 10 are novel over Kanetou.

Also in contrast to Kanetou, new independent claims 15 and 19 recite macromonomer that contains only units derived from (meth)acrylic acid and alkyl (meth)acrylate monomers. Thus, the macromonomers recited in new claims 15 and 19 do not contain any units derived from olefin monomers, and so the macromonomer recited in new claims 15 and 19 are different from the modified polyolefin macromonomer disclosed by Kanetou. Additionally, in the polymer compositions recited in new claims 15 and 19, each included carboxyl-functional monomer is a macromonomer that contains only units derived from (meth)acrylic acid and alkyl (meth)acrylate monomers, and other carboxyl-functional monomers are not present in the recited polymer composition. Therefore, polymer compositions that include macromonomers like those of Kanetou (i.e., that contain olefin units and are carboxyl-functional) fall outside of the polymer compositions recited in new claims 15 and 19. Thus Applicant submits that new claims 15 and 19 are novel over Kanetou.

Additionally, Applicant submits that current claims 2, 6, 7, 9, 11-14, 16-18, and 20-22, because each is directly or indirectly dependent on one of currently amended claim 1 or new claims 10, 15, and 19, are also novel over Kanetou.

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Conclusion

In view of the foregoing amendments and arguments, Applicant respectfully requests the Examiner to reexamine the claimed subject matter, to withdraw the rejections of the claimed subject matter and to allow claims 1, 2, 6, 7, and 9-22 at this time. If, however, there remain any open issues which the Examiner believes can be resolved by a telephone call, the Examiner is cordially invited to contact the undersigned agent.

A fee of \$200 is included herewith to cover one independent claim in excess of three. No additional fees are believed to be due in connection with the submission of this amendment; however, if any such fees, including petition or extension fees, are due, the Commissioner is hereby authorized to charge them, as well as to credit any overpayments, to Deposit Account No. 18-1850.

Respectfully Submitted,



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